

**IN THE CLAIMS:**

Claims 1 to 7 (Cancelled).

8. (New) A device for moving a bar for controlling reactivity in a core of a pressurized water nuclear reactor inside a vessel enclosing the reactor core closed off by a vessel head, comprising:

a control rod furnished with an arrangement for attaching the control bar at one axial end;

an electromechanical arrangement for moving the control rod in an axial direction; and

a sealed containment attached to the vessel head in a penetration opening comprising:

an adapter tube welded into the opening of the vessel head;

a tubular mechanism housing connected to the adapter on which is mounted the electromechanical arrangement for moving the control rod; and

a tubular sheath configured to allow the control rod to be axially moved between two extreme positions, closed at a first end and open at a second end, attached in the axial outward extension of the housing, by the tubular sheath second, open, end, wherein the adapter and the mechanism housing are made in a single piece, and the housing comprises, at an axial end opposite to the adapter, an internal tapping and a sealing lip in a shape of a portion of a torus surrounding the housing and made in an external surface having a cylindrical free joining surface having as an axis the axis of the housing, and that the tubular sheath comprises, at the second, open, end, a thread matching the tapping of the housing for it to be attached by screwing in a coaxial position into the housing and a sealing lip in a shape of a portion of a torus of dimensions matching those of the sealing lip of the housing having a cylindrical free joining end surface having as an axis the axis of the sheath, the sealing lip of the housing and the sealing lip of the sheath having free ends facing one another after the sheath has been screwed into the housing and being welded to one another, along an annular weld seam made

of filler metal coaxial with the housing and with the sheath of a depth in a direction parallel to the axis of the joint and of a width in a direction perpendicular to the axis of the joint that are substantially constant along the whole circumference of the weld joint.

9. (New) The device according to claim 8, wherein the tubular-shaped adapter and the mechanism housing are butt welded in a coaxial disposition to form an integrated housing attached to the vessel head by the adapter tube.

10. (New) The device according to claim 9, wherein the adapter tube is made of nickel alloy and the mechanism housing of stainless steel.

11. (New) The device according to claim 10, wherein the tubular sheath is made of stainless steel, and the sealing lip of the integrated housing and the sealing lip of the tubular sheath made in a single piece, respectively with the housing and the tubular sheath, are made of stainless steel.

12. (New) A method of mounting a device for moving a bar for controlling a reactivity in a core of a pressurized water nuclear reactor inside a vessel enclosing the reactor core closed off by a vessel head, comprising:

furnishing a control rod with an arrangement for attaching the control bar at one axial end, an electromechanical arrangement for moving the control rod in an axial direction and a sealed containment attached to the vessel head in a penetration opening comprising an adapter tube welded into the opening of the vessel head and a tubular mechanism housing fixedly attached to the adapter on which are mounted the electromechanical arrangement for moving the control rod and a tubular sheath allowing the

control rod to be axially moved between two extreme positions, closed at a first end and open at a second end;

attaching the housing being to the adapter; and

placing the housing in an axial extension toward an outside of the vessel; and

attaching the tubular sheath in the axial outward extension of the housing, by a second, open, end, wherein the mounting and the attachment by welding in a penetration opening of the vessel head of an integrated housing comprising the adapter and the mechanism housing are carried out in a single piece, and wherein the tubular sheath is screwed by a second threaded end part into the tapped part of the end of the integrated housing, so as to place cylindrical end connection surfaces facing one another having as their axis a common axis of the integrated housing and of the tubular sheath in the assembled position, of a first sealing lip fixedly attached to the integrated housing and of a second sealing lip fixedly attached to the tubular sheath, and that a sealed join of the sealing lips is achieved by an annular weld joint by automatic orbital welding, with the melting of an annular piece made of filler metal interposed between the end connection surfaces of the sealing lips.

13. (New) The method according to claim 12, further comprising:  
determining the automatic welding parameters by calibration  
operations on samples prior to producing the weld joint.

14. (New) The method as claimed in claim 12, wherein the weld joint is made by an automatic orbital TIG process, by melting annular filler metal by a tungsten electrode under inert gas.